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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,529	03/02/2005	Shridhar Mubaraq Mishra	1890-0205	5346

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EXAMINER

ELPENORD, CANDAL

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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10/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,529	MISHRA ET AL.	
	Examiner	Art Unit	
	Candal Elpenord	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>13 June 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 27-28** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 27, the occurrence of the phrase "a second predetermined level" recited in line 3 has no antecedent basis since "a first predetermined level" has not been introduced in claim 26. Similar problem exists in claim 28, line 3.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 9-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonomi et al (US 6,292,492 B1) in view of Valdevit et al (US 5,636,345).

Regarding claim 9, Bonomi et al. discloses an arrangement in a data switch (fig. 1, Switching arrangement, recited in col. 6, lines 52-61) having a plurality of ingress ports (fig. 2, Input ports 210-A-210-C, recited in col. 7, lines 35-42) and egress ports (fig. 2, Output Ports 230-A-230-C, recited in col. 7, lines 35-42) connected by a switching fabric (fig. 1, switching elements, recited in col. 6, lines 52-56 and "end-system switches", recited in col. 7, lines 1-12), the arrangement (fig. 1, Switching arrangement, recited in col. 6, lines 52-61) comprising: a plurality of ingress queues (fig. 2, Queue 250 or plurality of queues 220-A-220-Z, recited in col. 7, lines 43-53) configured to queue data derived from data packets ("buffered cells", recited in col. 3, lines 48-52 and col. 7, lines 35-42) received at the ingress ports (fig. 2, Input ports 210-A-210-C, recited in col. 7, lines 35-42) ; a broadcast packet estimation unit (fig. 4, Traffic manager, "multicast

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processing of cells:, recited in col. 4, lines 45-53 and "determining whether or not to reject cells based on memory", recited in col. 10, lines 32-45) configured to obtain a measure of the frequency of arrival of broadcast packets ("frequency of examining a port", recited in col. 10, lines 15-19) based on a measure of the length of at least one of the queues ("processing multicast cell based on the length of queue", recited in col. 5, lines 31-42), **regarding claim 10**, the arrangement (fig. 1, Switching arrangement, recited in col. 6, lines 52-61) having a plurality of ingress ports (fig. 2, Input ports 210-A-210-C, recited in col. 7, lines 35-42) wherein the broadcast packet estimation unit (fig. 4, Traffic manager, "multicast processing of cells:, recited in col. 4, lines 45-53 and "determining whether or not to reject cells abased on memory", recited in col. 10, lines 32-45) is configured to determine the measure of the frequency of arrival of broadcast packets ("multicast cell", recited in col. 5, lines 1-13) as the length ("counter for queue length", recited in col. 5, lines 1-5) of the longest of the queues ("longest branch queue", recited in col. 16, lines 38-59), **regarding claim 17**, a method of operating a data switch ("switch using memory to buffer multicast cells", recited in col. 3, lines 48-63 and fig. 1, Switching arrangement, recited in col. 6, lines 52-61) having a plurality of ingress ports (fig. 2, Input ports 210-A-210-C, recited in col. 7, lines 35-42) and egress ports (fig. 2, Output Ports 230-A-230-C, recited in col. 7, lines 35-42) connected by a switching fabric (fig. 1, switching elements, recited in col. 6, lines 52-56 and "end-system switches", recited in col. 7, lines 1-12) , the switch (fig. 1, Switching arrangement, recited in col. 6, lines 52-61) having a plurality of ingress queues (fig. 2, Queue 250 or plurality of queues 220-A-220-Z, recited in col. 7, lines 43-53) for queuing data derived from data

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packets ("buffered cells", recited in col. 3, lines 48-52 and col. 7, lines 35-42) arriving at the ingress ports (fig. 2, Queue 250 or plurality of queues 220-A-220-Z, recited in col. 7, lines 43-53), the method comprising: a) deriving a measure ("traffic manager keeping track per connection of queue length", recited in col. 4, lines 9-15) of a length of at least one of the queues ("queue length of connections", recited in col. 5, lines 62-67), (b) using the measure of a length of at least one of the queues ("processing multicast cell based on the length of queue", recited in col. 5, lines 31-42), to obtain a measure of a frequency of arrival ("frequency of examining a port", recited in col. 10, lines 15-19 and "congestion levels and increment of aggregate memory", recited in col. 16, lines 54-64) of broadcast packets (fig. 4, Traffic manager, "processing of multicast cells", recited in col. 4, lines 45-53 and "determining whether or not to reject cells based on memory", recited in col. 10, lines 32-45), **regarding claim 18**, the method wherein step b) further comprises using the measure of a length of the longest of the queues ("longest branch queue", recited in col. 16, lines 38-59 and "congestion levels and increment of aggregate memory", recited in col. 16, lines 54-64) to obtain the measure of the frequency of arrival of broadcast packets ("dynamically varying upper threshold memory during periods of high congestion", recited in col. 8, lines 21-27-implies that there is heavy traffic), **regarding claim 25**, a method of operating a data switch ("switch using memory to buffer multicast cells", recited in col. 3, lines 48-63 and fig. 1, Switching arrangement, recited in col. 6, lines 52-61) having a plurality of ingress ports (fig. 2, Input ports 210-A-210-C, recited in col. 7, lines 35-42) and egress ports (fig. 2, Output Ports 230-A-230-C, recited in col. 7, lines 35-42) connected by a switching fabric (fig. 1,

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switching elements, recited in col. 6, lines 52-56 and "end-system switches", recited in col. 7, lines 1-12), the switch having a plurality of ingress queues (fig. 2, Queue 250 or plurality of queues 220-A-220-Z, recited in col. 7, lines 43-53) for queuing data derived from data packets ("buffered cells", recited in col. 3, lines 48-52 and col. 7, lines 35-42) arriving at the ingress ports (fig. 2, Input ports 210-A-210-C, recited in col. 7, lines 35-42), the method comprising: a) deriving a measure ("traffic manager keeping track of connection of queue length", recited in col. 4, lines 9-15) of a length of at least one of the queues ("queue length of connections", recited in col. 5, lines 62-67); b) using the measure of a length of a longest ("longest branch queue", recited in col. 16, lines 38-59 and "congestion levels and increment of aggregate memory", recited in col. 16, lines 54-64) of the at least one queues to obtain a measure of a frequency of arrival of broadcast packets (heavy traffic during congestion periods-the data are arriving at a quick pace, the traffic manager increment the memory, recited in col. 16, lines 65-68 and col. 17, lines 3-9); **regarding claim 24**, the method wherein step b) further comprises using a sum ("sum of total memory storage and total memory space used by connections", recited in col. 11, lines 41-48 and col. 12, lines 3-7) a length a plurality of the at least one queues ("queue length of connections", recited in col. 5, lines 62-67) to obtain the measure of the frequency of arrival of broadcast packets ("updated of memory storage area every eight transmission unit", recited in col. 11, lines 49-55-this how frequent the cells are arriving at the buffer).

Bonomi et al. discloses the arrangement (fig. 1, Switching arrangement, recited in col. 6, lines 52-61) as recited in **claims 11-17**. However, Bonomi et al. is silent in

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regard to the following features: **regarding claim 9**, a broadcast packet control unit having a broadcast storm control mode in which the broadcast packet control unit performs a broadcast storm control operation, the broadcast packet control unit configured to operate in broadcast storm control mode based on the obtained measure of the frequency of arrival of broadcast packets, **regarding claim 11**, the broadcast packet control unit is configured to perform the broadcast storm control by deleting at least some of the broadcast packets, **regarding claim 12**, the broadcast packet control unit is configured to perform the broadcast storm control by deleting at least some of the broadcast packets when the broadcast packet estimation unit indicates that the measure of the frequency of arrival of broadcast packets is above a first predetermined level, **regarding claim 13**, the broadcast packet deletion unit is configured to cease deleting packets when the broadcast packet estimation unit indicates that the measure of the frequency of arrival of broadcast packets is below a second predetermined level, **regarding claim 14**, the broadcast packet control unit is configured to perform the broadcast storm control by deleting at least some of the broadcast packets, **regarding claim 15**, the broadcast packet control unit is configured to perform the broadcast storm control by deleting at least some of the broadcast packets when the broadcast packet estimation unit indicates that the measure of the frequency of arrival of broadcast packets is above a first predetermined level, **regarding claim 16**, the broadcast packet control unit is configured to perform the broadcast storm control when the broadcast packet estimation unit indicates that the measure of the frequency of arrival of broadcast packets is above a first predetermined level, **regarding claim 17**,

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triggering a broadcast storm control mode in which broadcast storm control is performed according to the measure of the frequency of arrival of broadcast packets, **regarding claim 19**, the method wherein step c) further comprises triggering a broadcast storm control mode in which broadcast storm control is performed when the measure of the frequency of arrival of broadcast packets rises above a first predetermined level, **regarding claim 20**, the method, wherein the broadcast storm control is performed by deleting at least some of the broadcast packets, **regarding claim 21**, the method further including a step of ceasing to delete packets when the measure of the frequency of arrival of broadcast packets falls below a second predetermined level, **regarding claim 22**, the method wherein step c) further comprises triggering a broadcast storm control mode in which broadcast storm control is performed when the measure of the frequency of arrival of broadcast packets rises above a first predetermined level, **regarding claim 25**, triggering a broadcast storm control mode in which broadcast storm control is performed according to the measure of the frequency of arrival of broadcast packets. However, Valdevit et al. in similar field of endeavor discloses: **regarding claim 9**, a broadcast packet control unit ("monitored of node broadcast rates", recited in abstract, lines 1-8) having a broadcast storm control mode ("rate exceeding allowed broadcast rates-occurrence of broadcast storm" and indicating of warning signal thereafter, recited in abstract, lines 8-21) in which the broadcast packet control unit ("rate violation unit detecting exceeded rates and execution of counter measures", recited in col. 3, lines 26-30) performs a broadcast storm control operation ("generation of warning signal", recited in abstract, lines 13-18), the broadcast packet

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control unit ("rate violation unit detecting exceeded rates and execution of counter measures", recited in col. 3, lines 26-30) configured to operate in broadcast storm control mode ("counter measures executed", recited in col. 3, lines 26-30) based on the obtained measure of the frequency of arrival of broadcast packets ("detection of arrival rates of broadcast messages", recited in col. 3, lines 20-26), **regarding claim 11**, the broadcast packet control unit ("rate violation handling unit taking counter measures", recited in col. 3, lines 26-30) is configured to perform the broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) by deleting at least some of the broadcast packets ("elimination of network traffic that is causing the storm", recited in col. 8, lines 55-65), **regarding claim 12**, the broadcast packet control unit ("monitored of node broadcast rates", recited in abstract, lines 1-8) is configured to perform the broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) by deleting at least some of the broadcast packets ("elimination of network traffic that is causing the storm", recited in col. 8, lines 55-65) when the broadcast packet estimation unit indicates that the measure of the frequency of arrival of broadcast packets is above a first predetermined level ("broadcast rates exceeding the maximum allowed rate", recited in col. 3, lines 6-15 and "predetermined threshold", recited in col. 6, lines 4-14), **regarding claim 13**, the broadcast packet deletion unit is configured to cease deleting packets ("when the broadcast rates fall below predetermined level, the computer system processes broadcast data/messages", recited in col. 8, lines 44-54) when the broadcast packet estimation unit ("rate monitoring of broadcast arrivals", recited in col. 6, lines 1-14)

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indicates that the measure of the frequency of arrival of broadcast packets ("determining broadcast rates", recited in col. 7, lines 14-19) is below a second predetermined level ("cease to generate when broadcast rate falls below maximum rate", recited in col. 8, lines 32-38) , **regarding claim 14**, the broadcast packet control unit ("rate violation unit detecting exceeded rates and execution of counter measures", recited in col. 3, lines 26-30 and "measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) is configured to perform the broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) by deleting at least some of the broadcast packets ("elimination of network traffic that is causing the storm", recited in col. 8, lines 55-65), **regarding claim 15**, the broadcast packet control unit ("rate violation unit detecting exceeded rates and execution of counter measures", recited in col. 3, lines 26-30) is configured to perform the broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) by deleting at least some of the broadcast packets ("elimination of network traffic that is causing the storm", recited in col. 8, lines 55-65) when the broadcast packet estimation unit indicates that the measure of the frequency of arrival of broadcast packets is above a first predetermined level ("broadcast rates exceeding the maximum allowed rate", recited in col. 3, lines 6-15 and "predetermined threshold", recited in col. 6, lines 4-14), **regarding claim 16**, the broadcast packet control unit ("rate violation handling unit taking counter measures", recited in col. 3, lines 26-30) is configured to perform the broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) when the broadcast packet estimation unit ("determining

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broadcast rates", recited in col. 7, lines 14-19) indicates that the measure of the frequency of arrival of broadcast packets ("detecting of arrival rates in ATM network", recited in col. 3, lines 20-26 and fig. 2 ATM network, recited in col. 4, lines 52-67) is above a first predetermined level ("broadcast rates exceeding the maximum allowed rate", recited in col. 3, lines 6-15 and "predetermined threshold", recited in col. 6, lines 4-14), **regarding claim 17**, triggering a broadcast storm control mode ("rate exceeding allowed broadcast rates-occurrence of broadcast storm" and indicating of warning signal thereafter, recited in abstract, lines 8-21) in which broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) is performed according to the measure of the frequency of arrival of broadcast packets ("detection of arrival rates of broadcast messages", recited in col. 3, lines 20-26) , **regarding claim 19**, the method wherein step c) further comprises triggering a broadcast storm control mode ("rate exceeding allowed broadcast rates-occurrence of broadcast storm" and indicating of warning signal thereafter, recited in abstract, lines 8-21) in which broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) is performed when the measure of the frequency of arrival of broadcast packets rises above a first predetermined level ("broadcast rates exceeding the maximum allowed rate", recited in col. 3, lines 6-15 and "predetermined threshold", recited in col. 6, lines 4-14), **regarding claim 20**, the method, wherein the broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) is performed by deleting at least some of the broadcast packets ("elimination of network traffic that is causing the storm", recited in col. 8, lines 55-65),

regarding claim 21, the method further including a step of ceasing to delete packets ("when the broadcast rates fall below predetermined level, the computer system processes broadcast data/messages", recited in col. 8, lines 44-54-implies that there is no longer elimination of broadcast data once the rates fall below the predetermined threshold) when the measure of the frequency of arrival of broadcast packets ("determining broadcast rates", recited in col. 7, lines 14-19) falls below a second predetermined level ("cease to generate when broadcast rate falls below maximum rate", recited in col. 8, lines 32-38), **regarding claim 22**, the method wherein step c) further comprises triggering a broadcast storm control mode ("rate exceeding allowed broadcast rates-occurrence of broadcast storm" and indicating of warning signal thereafter, recited in abstract, lines 8-21) in which broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) is performed when the measure of the frequency of arrival of broadcast packets ("detection of arrival rates of broadcast messages", recited in col. 3, lines 20-26) rises above a first predetermined level ("broadcast rates exceeding the maximum allowed rate", recited in col. 3, lines 6-15 and "predetermined threshold", recited in col. 6, lines 4-14), **regarding claim 25**, triggering a broadcast storm control mode ("rate exceeding allowed broadcast rates-occurrence of broadcast storm" and indicating of warning signal thereafter, recited in abstract, lines 8-21) in which broadcast storm control ("measures taken against detrimental broadcast storm", recited in col. 7, lines 35-43) is performed according to the measure of the frequency of arrival of broadcast packets ("detection of arrival rates of broadcast messages", recited in col. 3, lines 20-26). Therefore, it would have been

obvious to one of ordinary skill in the art at the time of the invention was made to modify the features as of Bonomi et al. by using features as taught by Valdevit et al. in order to provide protection against broadcast storm (See col. 2-3, lines 1-2 and lines 1-6 for motivation).

Regarding claims 26-28, they are rejected for the same reasons as claims 10, 18, and 13 and 21 since they have the same limitations.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Burrows et al (US 2002/0073338 A1), Cnodder et al (US 2001/002655 A1), and Fiammante et al (US 6,081,532) are cited to show methods and systems that are related to the claimed invention.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Candal Elpenord whose telephone number is (571) 270-3123. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CE

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Kwang Bin Yao', is positioned below the printed name and title.